

Claims

1. An apparatus for handling objects, each object having an aperture
5 therein defining a rim, the apparatus comprising a support on which, in use, one or more objects may be stacked, or unloaded from; an arm located adjacent the support; and control circuitry adapted to effect extension of the arm through the aperture of at least one of the objects, displacement of the arm into engagement
10 with the rim of the at least one object, retraction of the arm such as to position the rim over the support, and displacement of the arm such that the rim is engaged by the support.
2. An object handling apparatus according to claim 1 in which the arm
15 and the support are elongate, and are substantially parallel to one another.
3. An object handling apparatus according to claim 1 or 2 wherein the
arm is provided with a plurality of indentations spaced apart along the length thereof.
- 20 4. An object handling apparatus according to any of claims 1 to 3 wherein the support is provided with a plurality of indentations spaced apart along the length thereof.
5. An object handling apparatus according to any preceding claim
25 wherein the apparatus is provided with a sensor which is adapted to detect when a preset number of objects have been stacked on the support.
6. An object handling apparatus according to any preceding claim in
which the arm is comprised of a first set of jaws movable relative to one another.

7. An object handling apparatus according to claim 6 in which the support is comprised of a second set of jaws movable relative to one another and the first set of jaws.

5 8. An object handling apparatus according to any of claims 1 to 5 wherein the support is substantially penannular in cross-section such that the arm, when retracted, is substantially recessed within the support.

9. A method of handling objects, each object having an aperture therein
10 defining a rim, the method comprising the steps of providing an apparatus according to any of claims 1 to 8; extending the arm through the aperture of at least one of the objects; displacing the arm into engagement with the rim of the at least one object; retracting the arm such as to position the rim over the support; and displacing the arm such that the rim is engaged by the support.

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10. A method of handling objects according to claim 9 in which the arm is extended through the aperture in a first direction; the arm is displaced in a second direction, substantially perpendicular to the first direction, such as to engage the rim; the arm is retracted in the first direction; and the arm is displaced in the
20 second direction such that the rim is engaged by the support.

11. A method of handling objects according to claim 9 or 10, comprising the steps of providing the arm as a first set of jaws moveable relative to one another; providing the support as a second set of jaws moveable relative to one
25 another and the first set of jaws; in engaging the arm with the rim, advancing the first set of jaws away from one another such as to engage the rim at two locations; following retraction of the arm, advancing the second set of jaws away from one another, such as to engage the rim at two locations; and in retracting the arm, advancing the first set of jaws towards one another, such as to disengage the rim.

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12. A method of handling objects according to any of claims 9 to 11, comprising the step of providing a plurality of indentations spaced apart along the length of the arm.
- 5 13. A method of handling objects according to any of claims 9 to 12, comprising the step of providing a plurality of indentations spaced apart along the length of the support.